FIG. 1

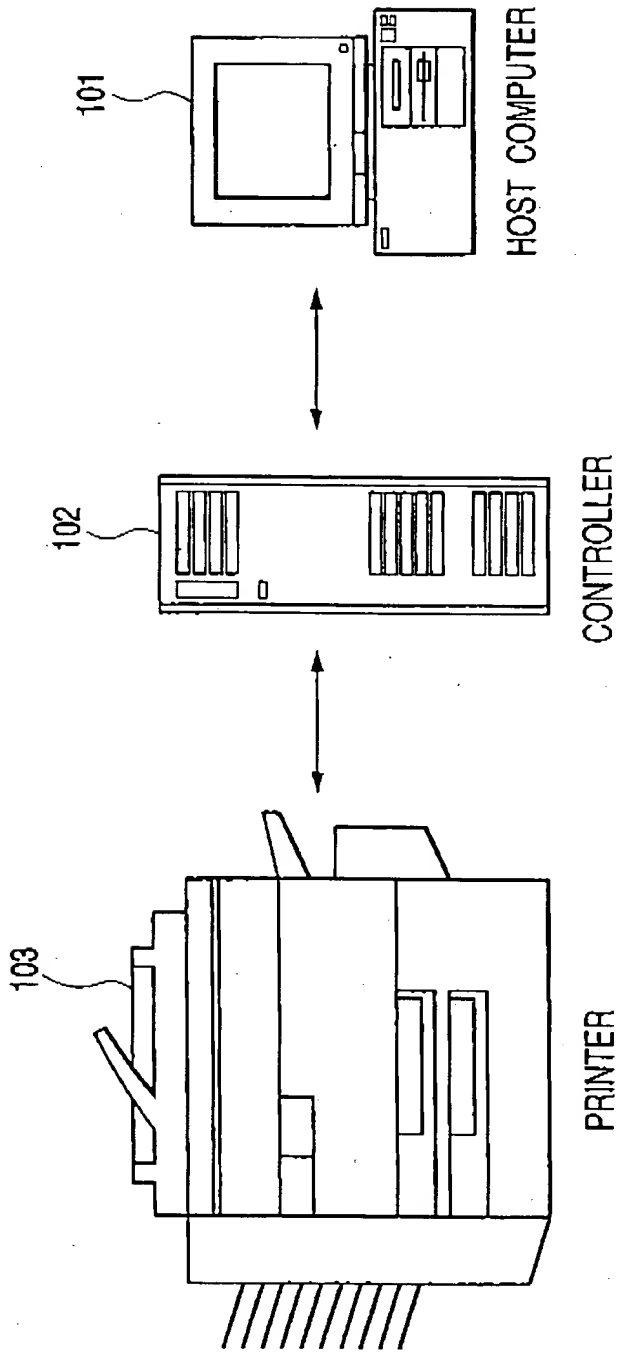

FIG. 2

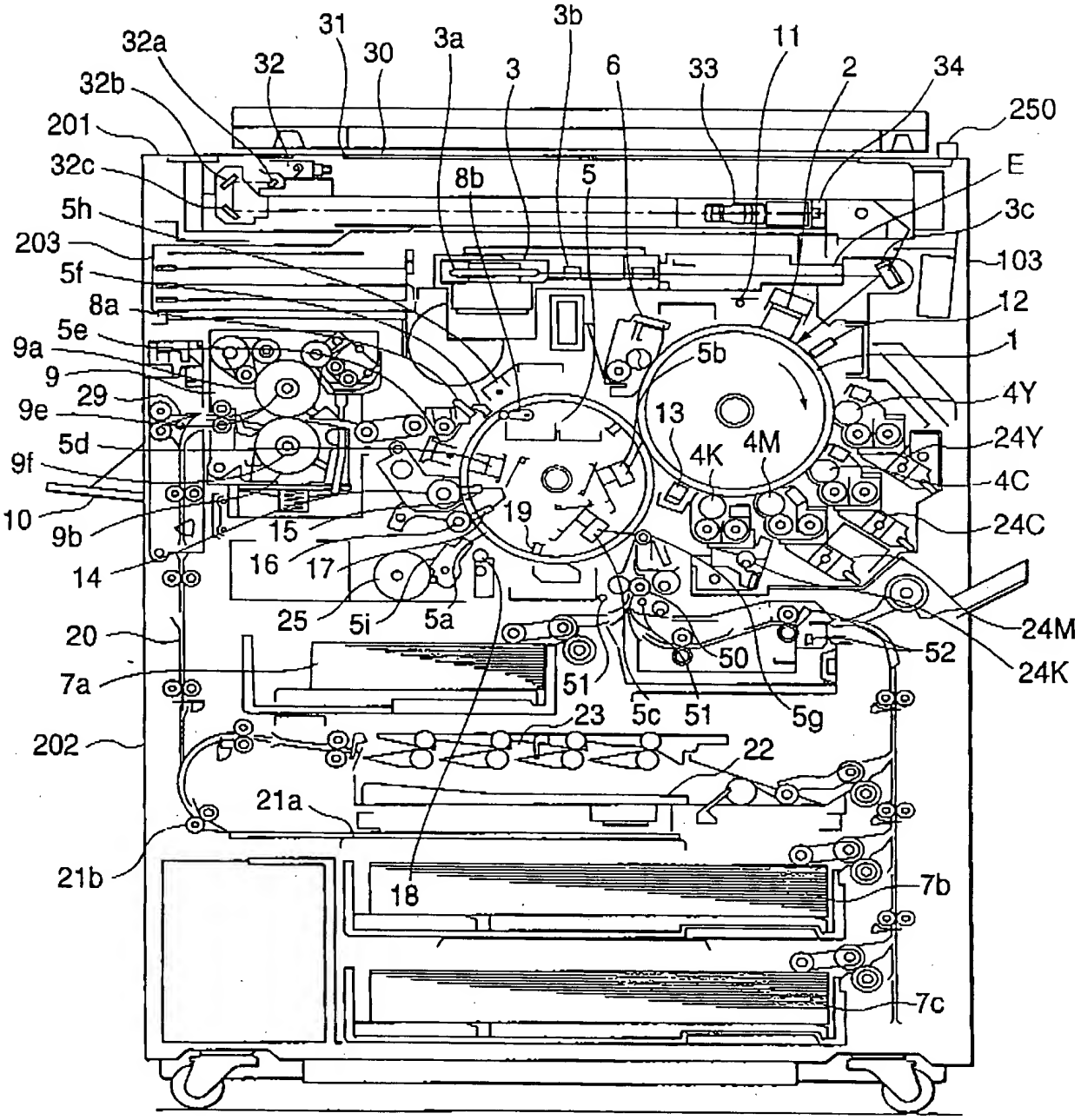
32a
31
3b
11
32
30
3a
3
6
33
2
34
250
32b
201
32c
8b
5
E
5h
3c
203
103
5f
12
8a
1
5e
5b
9a
4Y
9
29
13
9e
4K
4M
24Y
5d
9f
4C
10
19
24C
9b
15
16
17
14
25
5i
5a
24M
20
50
52
24K
7a
51
23
5c
51
5g
202
22
21a
21b
18
7b
7c

FIG. 3

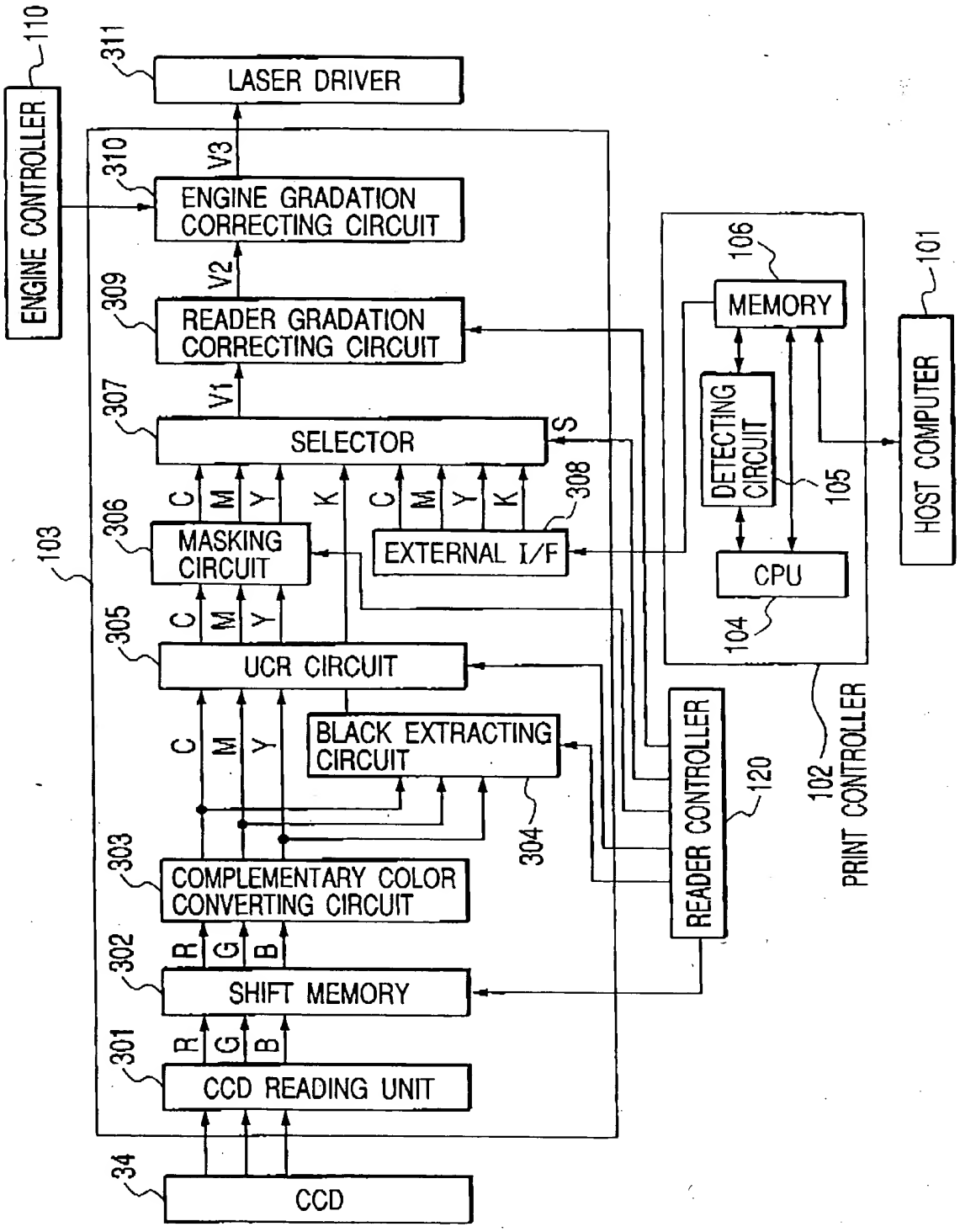
110
ENGINE CONTROLLER
311
LASER DRIVER
310
ENGINE GRADATION CORRECTING CIRCUIT
V3
309
READER GRADATION CORRECTING CIRCUIT
V2
307
SELECTOR
V1
S
308
C
M
Y
K
306
MASKING CIRCUIT
EXTERNAL I/F
103
305
UCR CIRCUIT
BLACK EXTRACTING CIRCUIT
304
303
COMPLEMENTARY COLOR CONVERTING CIRCUIT
302
SHIFT MEMORY
R
G
B
301
CCD READING UNIT
34
CCD
106
MEMORY
DETECTING CIRCUIT
105
CPU
104
101
HOST COMPUTER
102
PRINT CONTROLLER
120
READER CONTROLLER

FIG. 4

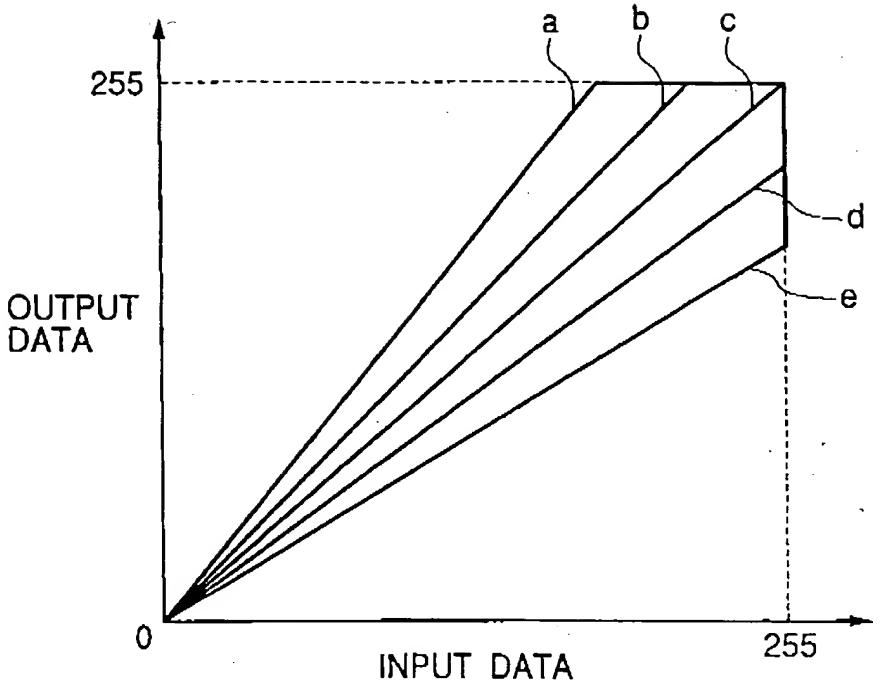
a
b
c
d
e
255
OUTPUT DATA
0
255
INPUT DATA

FIG. 5

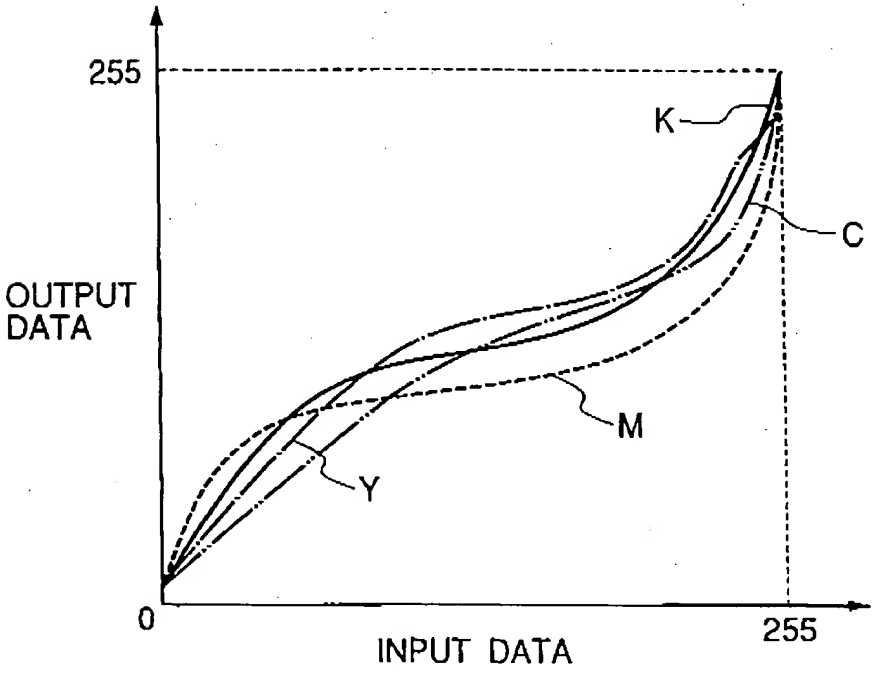
255
K
C
OUTPUT DATA
M
Y
0
255
INPUT DATA

FIG. 6

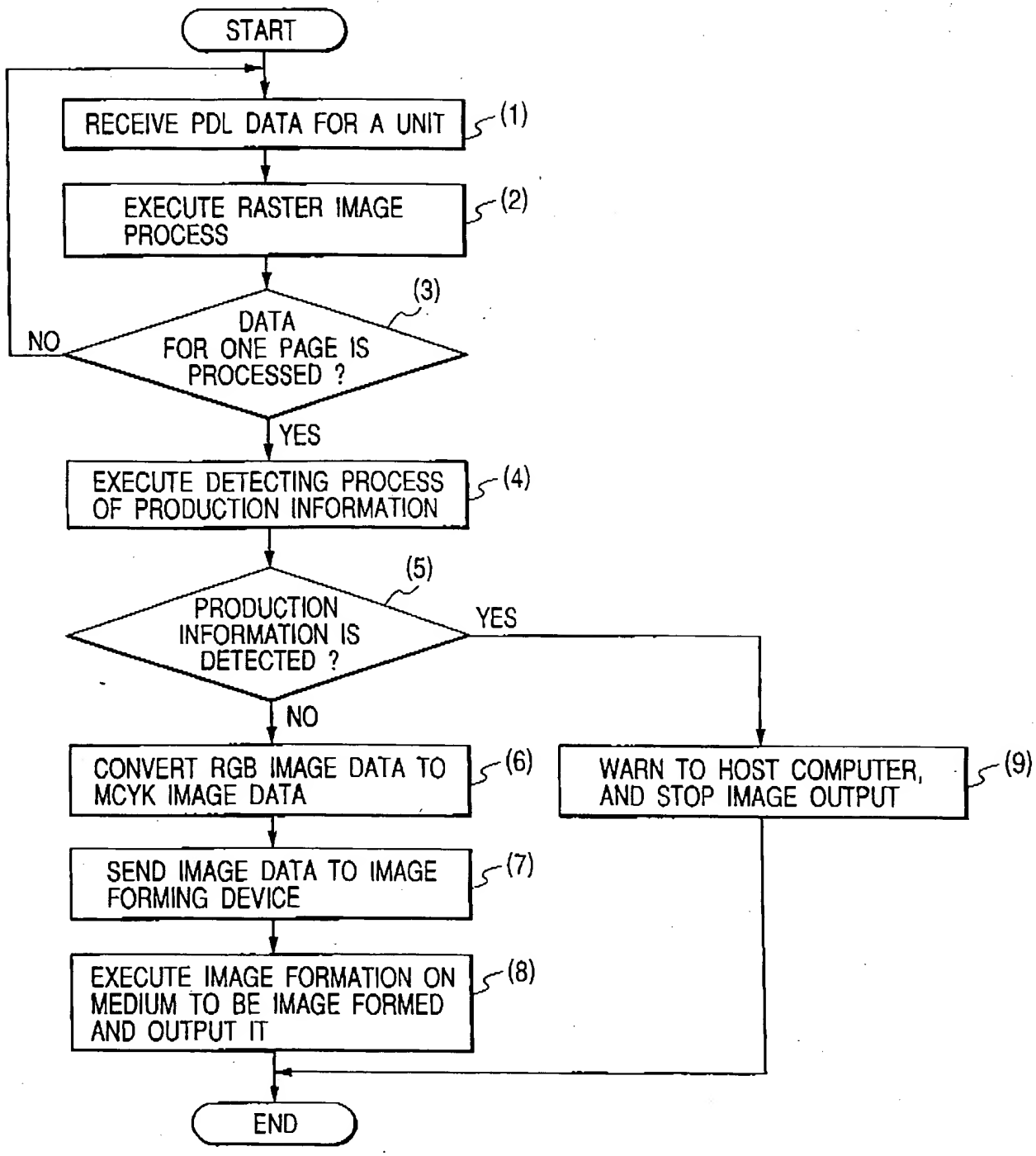
START
RECEIVE PDL DATA FOR A UNIT
(1)
EXECUTE RASTER IMAGE PROCESS
(2)
DATA FOR ONE PAGE IS PROCESSED ?
(3)
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
(4)
PRODUCTION INFORMATION IS DETECTED ?
(5)
YES
NO
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
(6)
SEND IMAGE DATA TO IMAGE FORMING DEVICE
(7)
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED AND OUTPUT IT
(8)
WARN TO HOST COMPUTER, AND STOP IMAGE OUTPUT
(9)
END

FIG. 7A

FIG. 7B

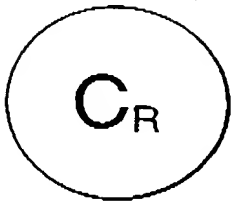

FIG. 7C

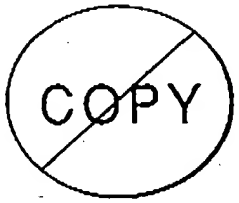

FIG. 7D

FIG. 7E

THIS IMAGE CAN NOT COPIED BECAUSE OF PRODUCTION

FIG. 8A

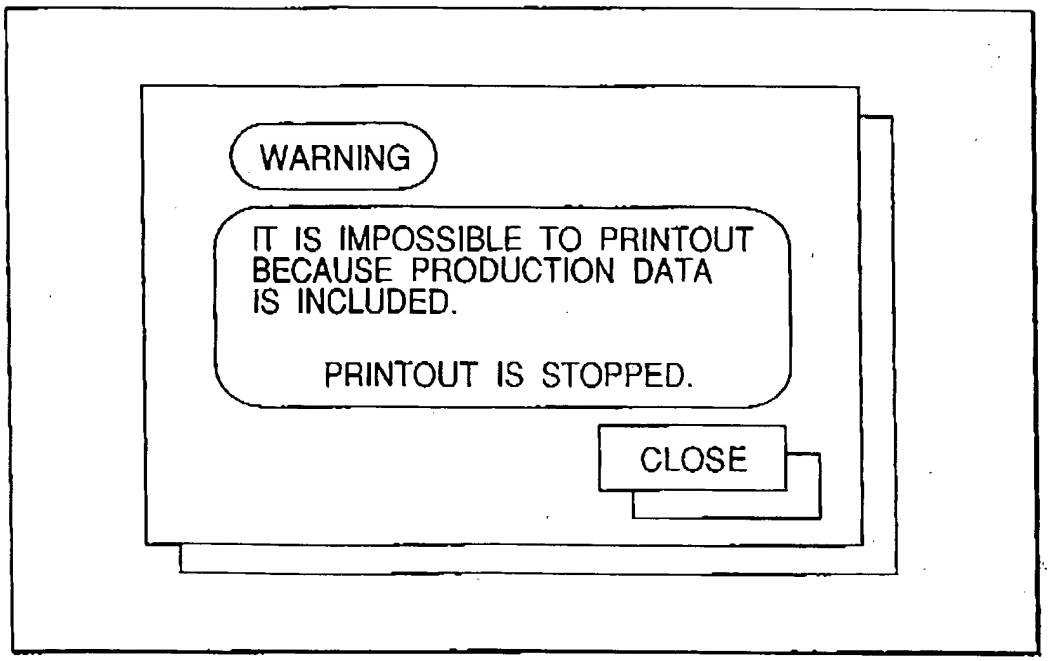
WARNING
IT IS IMPOSSIBLE TO PRINTOUT BECAUSE PRODUCTION DATA IS INCLUDED.
PRINTOUT IS STOPPED.
CLOSE

FIG. 8B

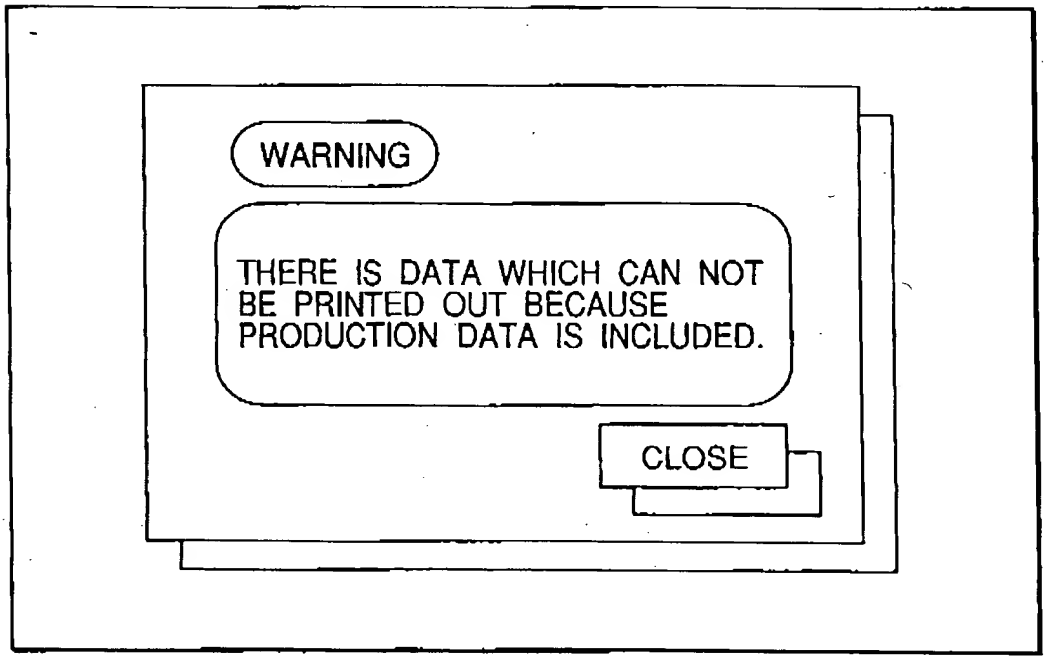
WARNING
THERE IS DATA WHICH CAN NOT BE PRINTED OUT BECAUSE PRODUCTION DATA IS INCLUDED.
CLOSE

FIG. 9

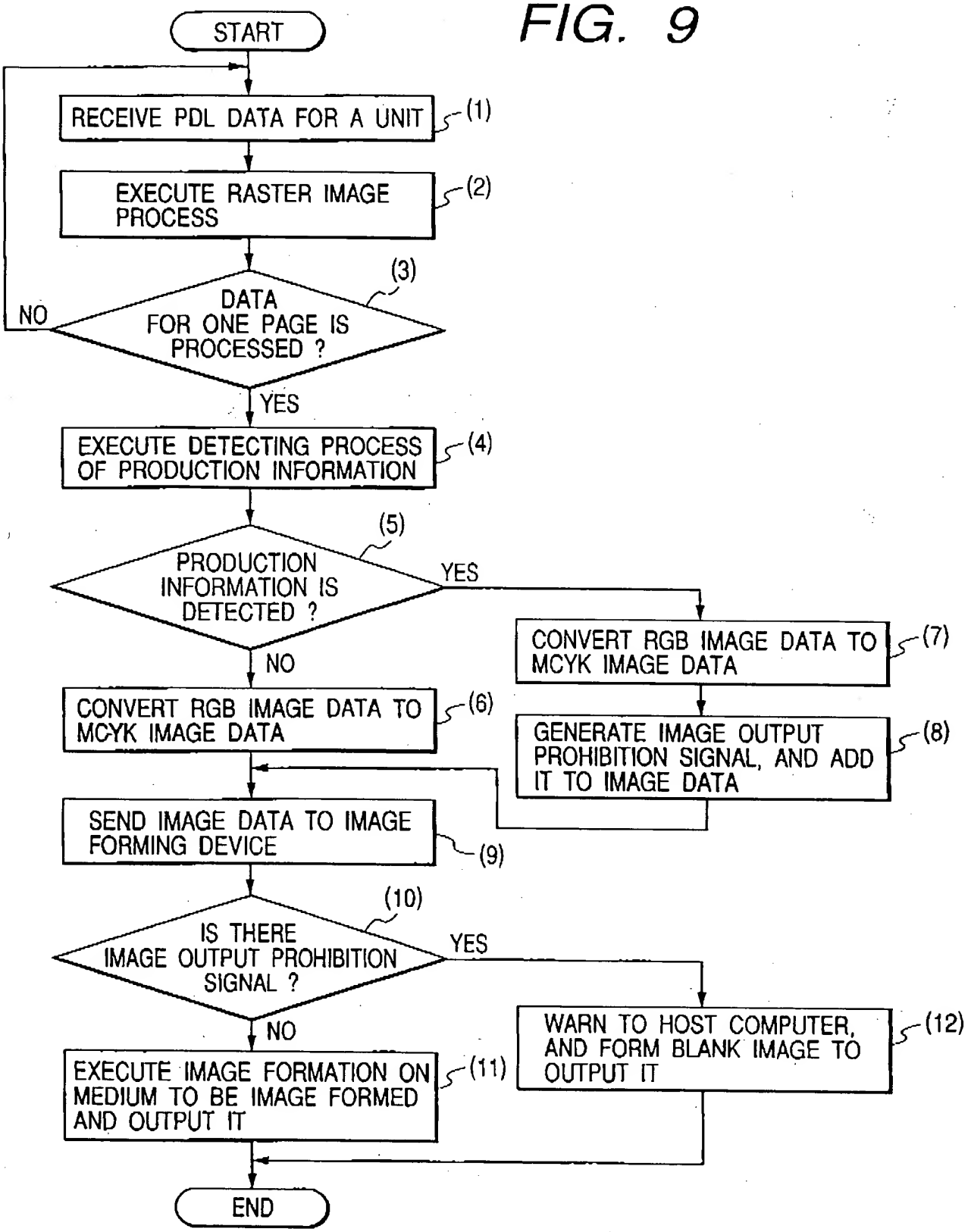
START
RECEIVE PDL DATA FOR A UNIT
(1)
EXECUTE RASTER IMAGE PROCESS
(2)
DATA FOR ONE PAGE IS PROCESSED ?
(3)
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
(4)
PRODUCTION INFORMATION IS DETECTED ?
(5)
YES
NO
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
(6)
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
(7)
GENERATE IMAGE OUTPUT PROHIBITION SIGNAL, AND ADD IT TO IMAGE DATA
(8)
SEND IMAGE DATA TO IMAGE FORMING DEVICE
(9)
IS THERE IMAGE OUTPUT PROHIBITION SIGNAL ?
(10)
YES
NO
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED AND OUTPUT IT
(11)
WARN TO HOST COMPUTER, AND FORM BLANK IMAGE TO OUTPUT IT
(12)
END

FIG. 10

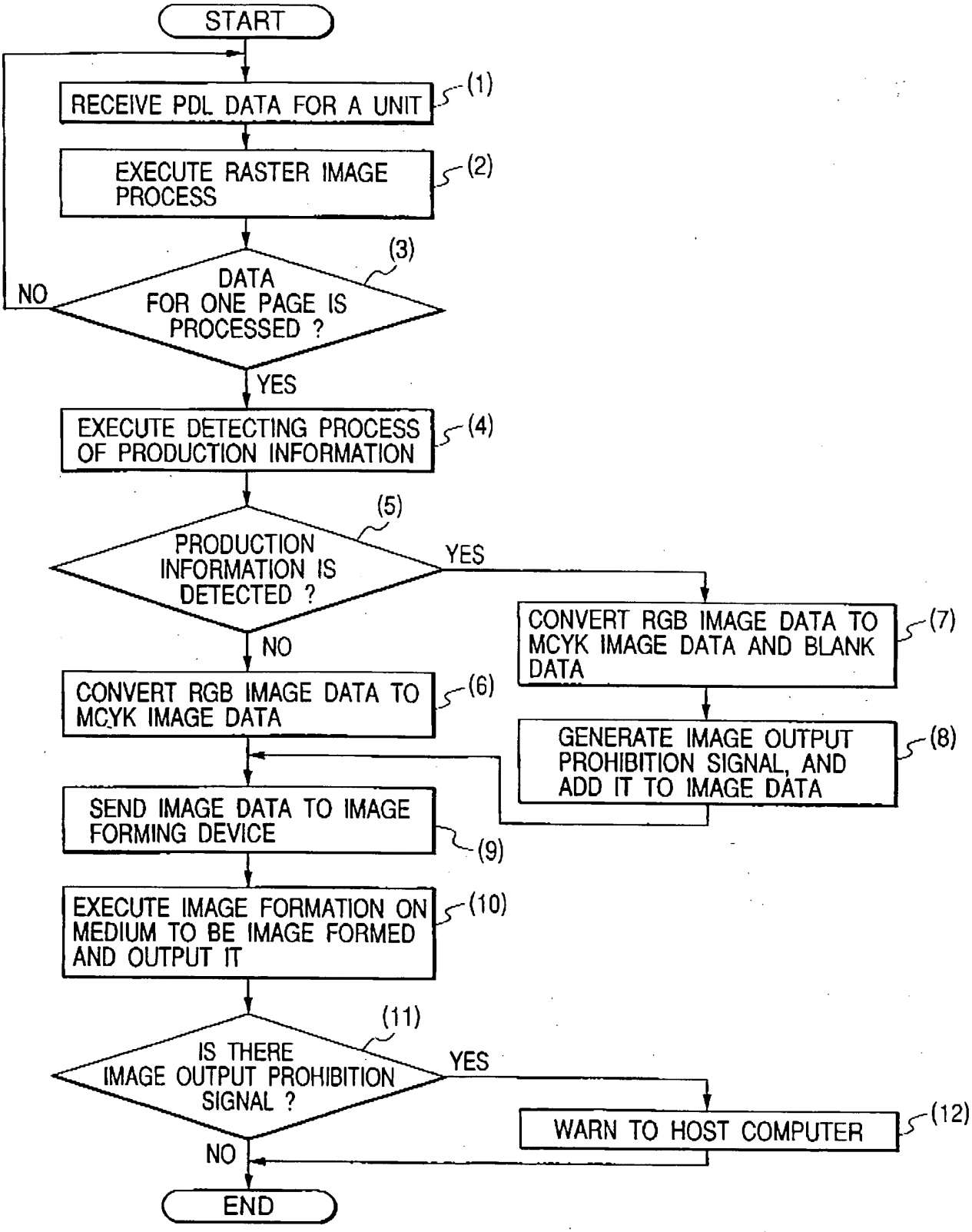
START
RECEIVE PDL DATA FOR A UNIT
(1)
EXECUTE RASTER IMAGE PROCESS
(2)
DATA FOR ONE PAGE IS PROCESSED ?
(3)
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
(4)
PRODUCTION INFORMATION IS DETECTED ?
(5)
YES
NO
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
(6)
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA AND BLANK DATA
(7)
GENERATE IMAGE OUTPUT PROHIBITION SIGNAL, AND ADD IT TO IMAGE DATA
(8)
SEND IMAGE DATA TO IMAGE FORMING DEVICE
(9)
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED AND OUTPUT IT
(10)
IS THERE IMAGE OUTPUT PROHIBITION SIGNAL ?
(11)
YES
NO
WARN TO HOST COMPUTER
(12)
END

FIG. 11

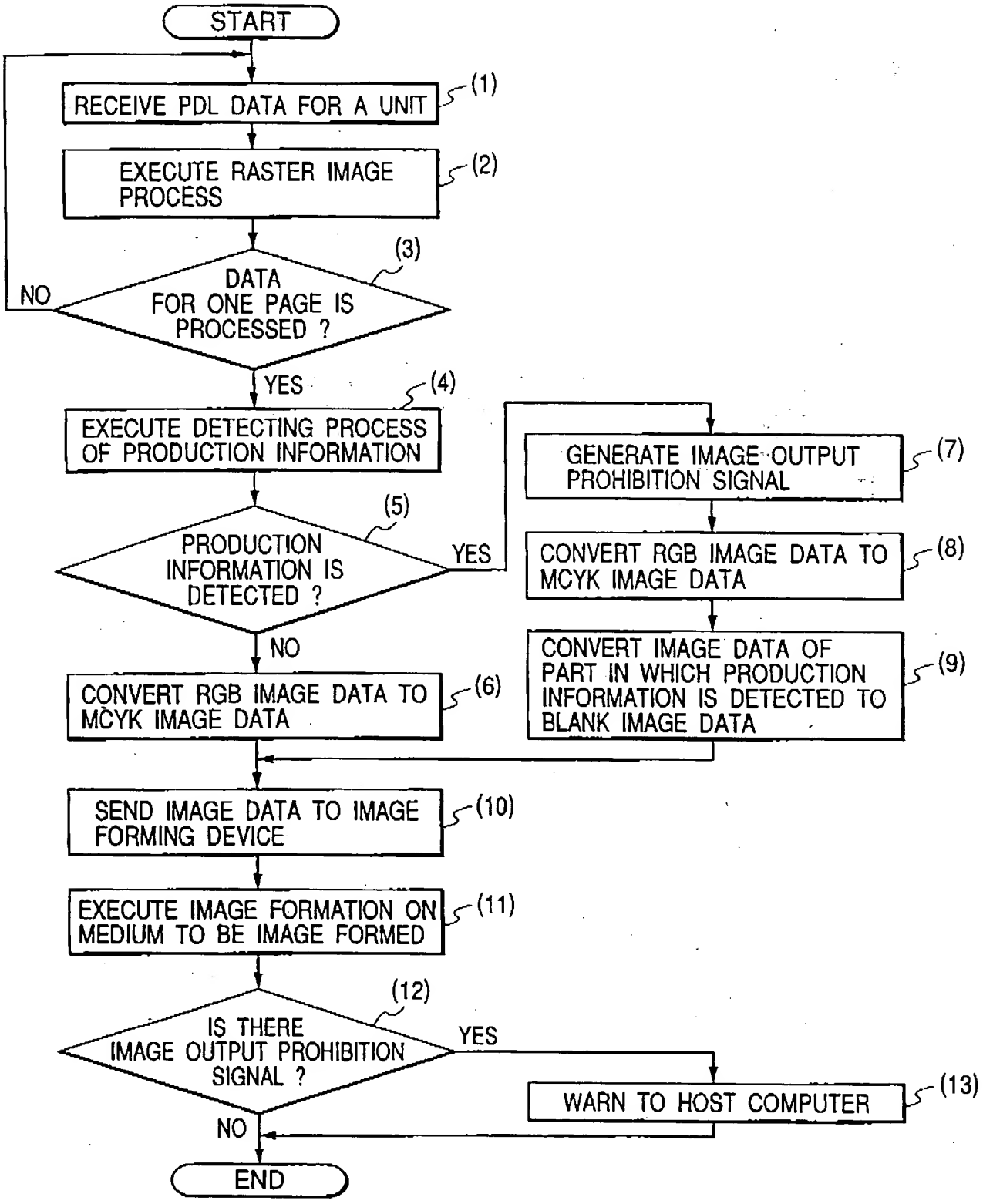
START
RECEIVE PDL DATA FOR A UNIT
(1)
EXECUTE RASTER IMAGE PROCESS
(2)
DATA FOR ONE PAGE IS PROCESSED ?
(3)
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
(4)
PRODUCTION INFORMATION IS DETECTED ?
(5)
YES
NO
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
(6)
GENERATE IMAGE OUTPUT PROHIBITION SIGNAL
(7)
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
(8)
CONVERT IMAGE DATA OF PART IN WHICH PRODUCTION INFORMATION IS DETECTED TO BLANK IMAGE DATA
(9)
SEND IMAGE DATA TO IMAGE FORMING DEVICE
(10)
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED
(11)
IS THERE IMAGE OUTPUT PROHIBITION SIGNAL ?
(12)
YES
NO
WARN TO HOST COMPUTER
(13)
END

FIG. 12

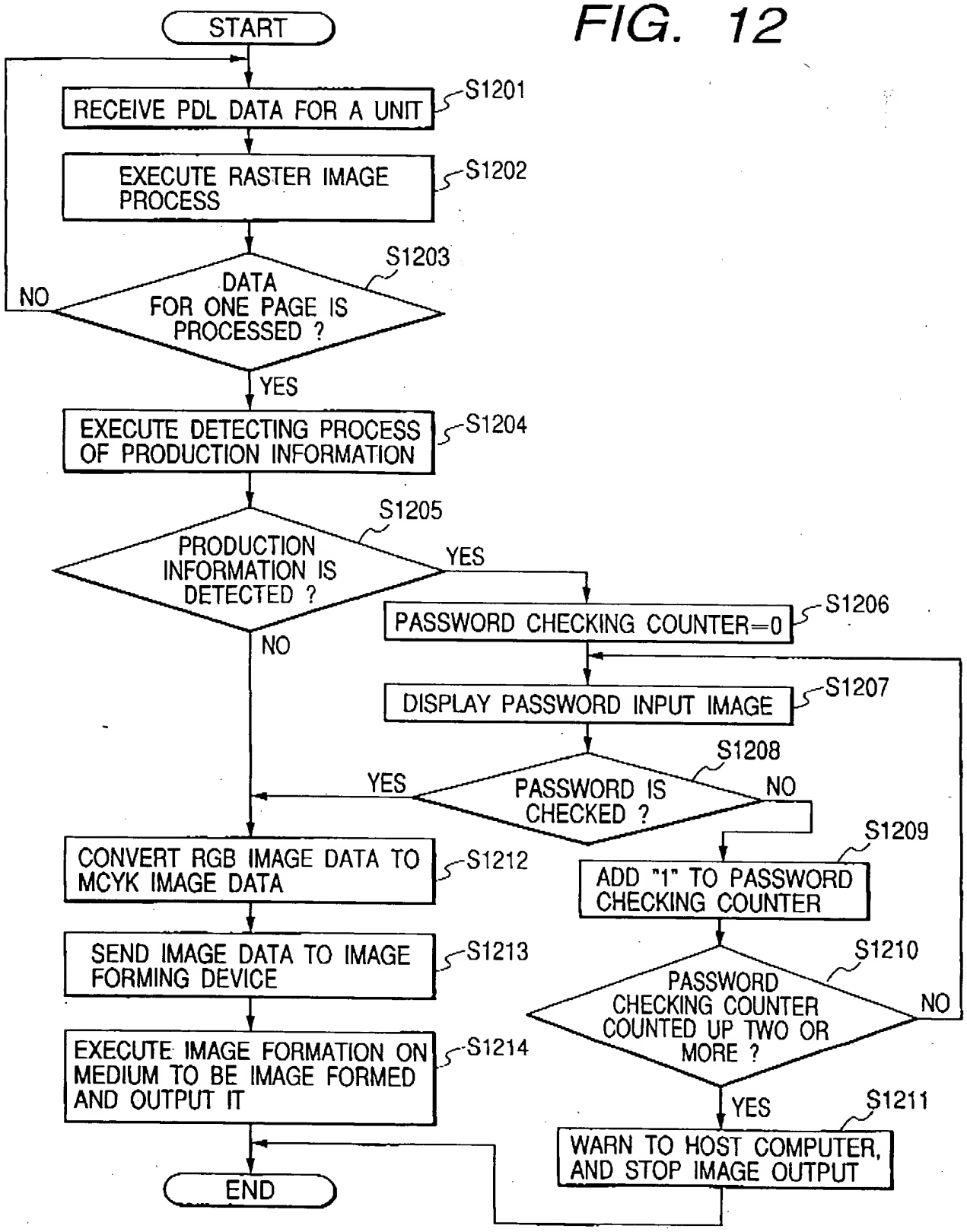
START
RECEIVE PDL DATA FOR A UNIT
S1201
EXECUTE RASTER IMAGE PROCESS
S1202
DATA FOR ONE PAGE IS PROCESSED ?
S1203
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
S1204
PRODUCTION INFORMATION IS DETECTED ?
S1205
YES
NO
PASSWORD CHECKING COUNTER=0
S1206
DISPLAY PASSWORD INPUT IMAGE
S1207
PASSWORD IS CHECKED ?
S1208
YES
NO
ADD "1" TO PASSWORD CHECKING COUNTER
S1209
PASSWORD CHECKING COUNTER COUNTED UP TWO OR MORE ?
S1210
NO
YES
WARN TO HOST COMPUTER, AND STOP IMAGE OUTPUT
S1211
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
S1212
SEND IMAGE DATA TO IMAGE FORMING DEVICE
S1213
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED AND OUTPUT IT
S1214
END

FIG. 13A

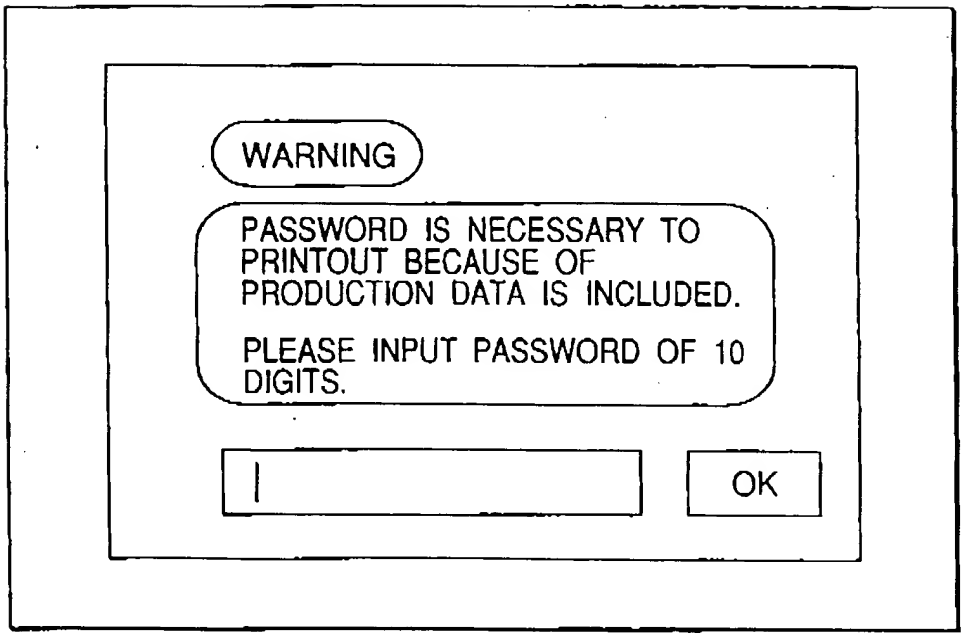

FIG. 13B

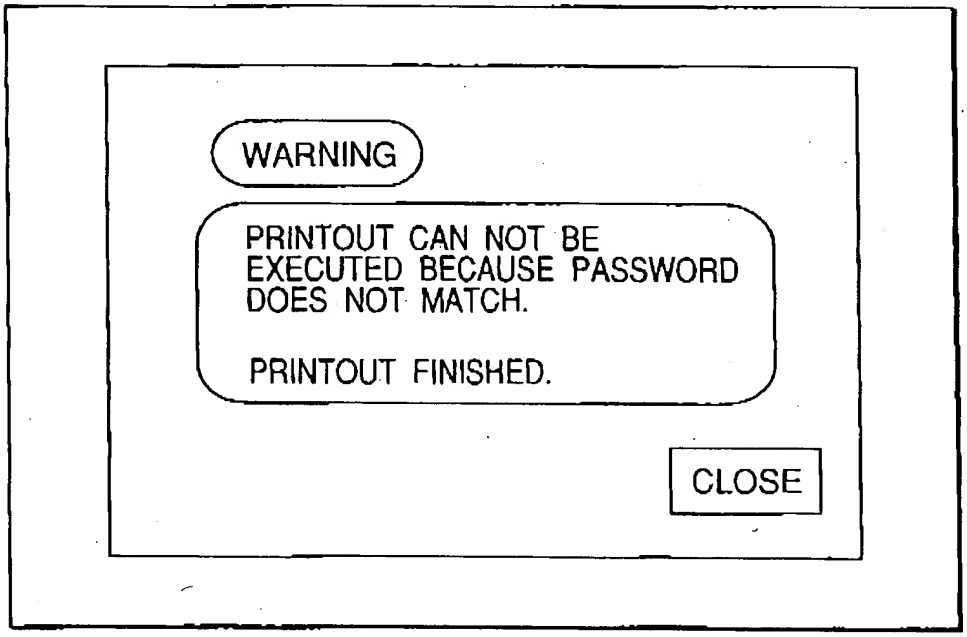

FIG. 14A

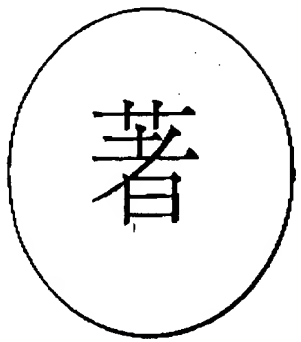

FIG. 14B

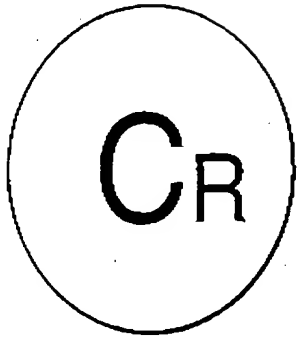

FIG. 14C

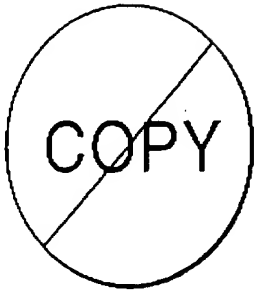

FIG. 14D

FIG. 14E

9218576630194923

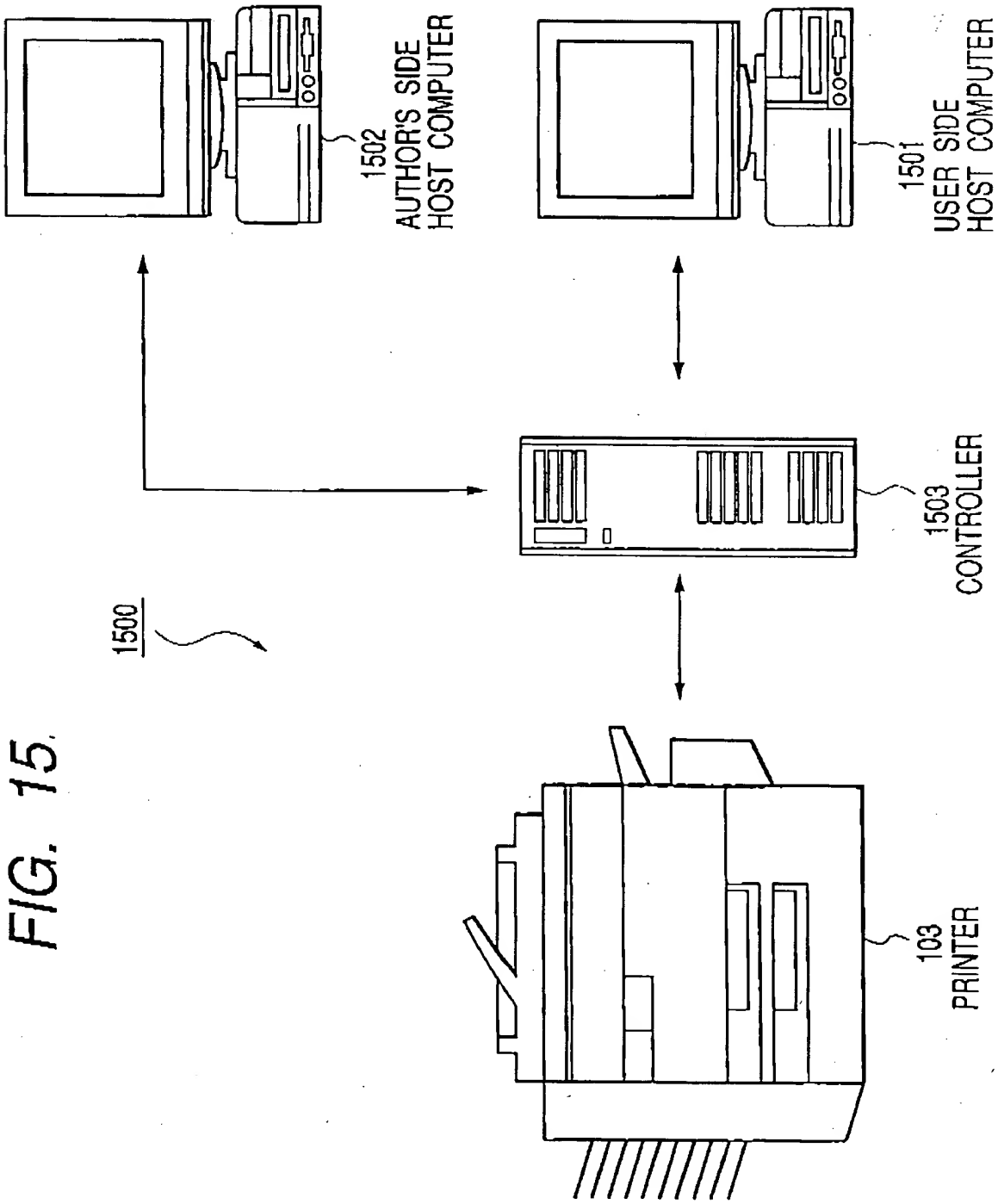
1502
AUTHOR'S SIDE
HOST COMPUTER
1501
USER SIDE
HOST COMPUTER
1503
CONTROLLER
1500
103
PRINTER

FIG. 15

FIG. 16

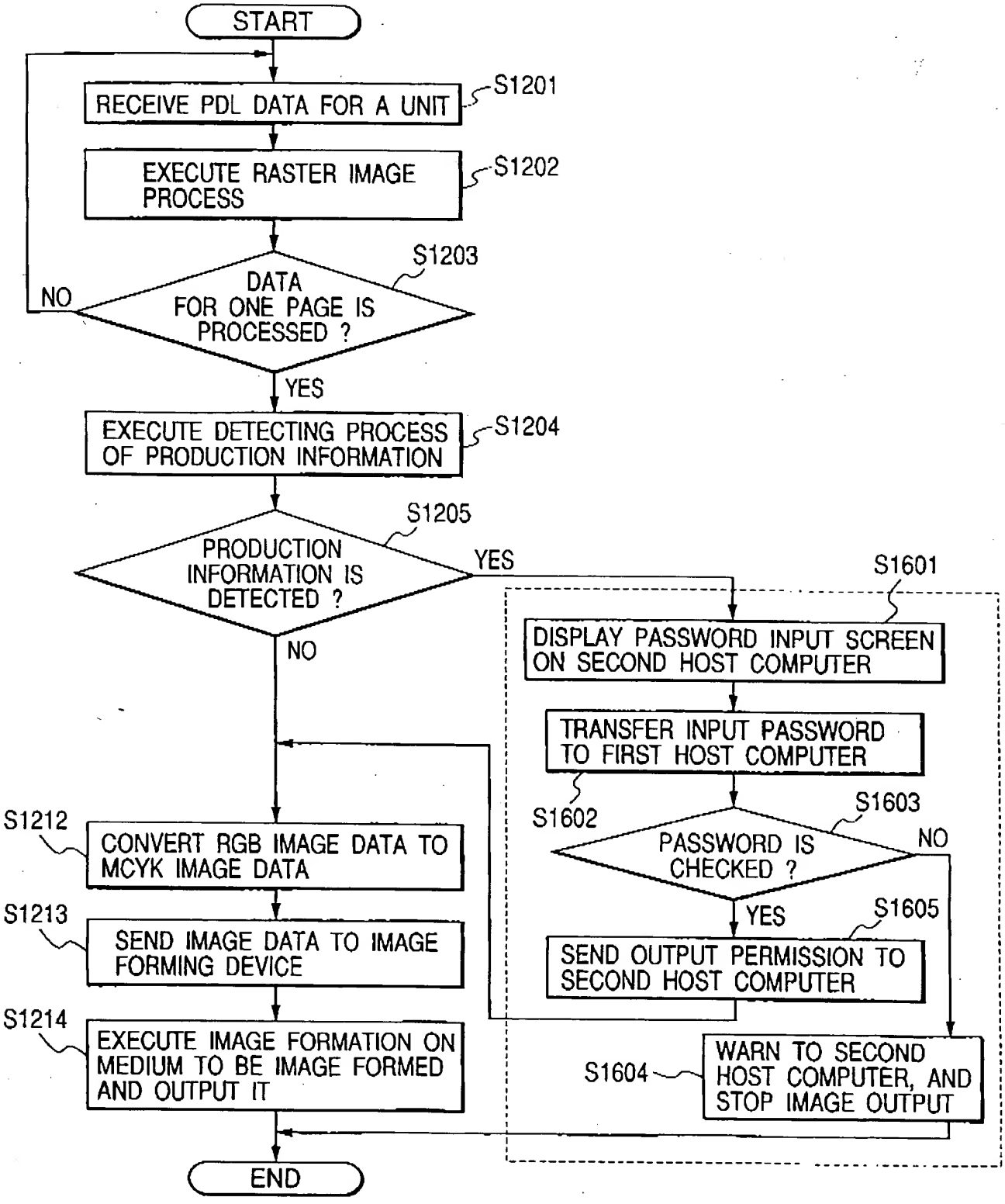
START
RECEIVE PDL DATA FOR A UNIT
S1201
EXECUTE RASTER IMAGE PROCESS
S1202
DATA FOR ONE PAGE IS PROCESSED ?
S1203
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
S1204
PRODUCTION INFORMATION IS DETECTED ?
S1205
YES
NO
S1601
DISPLAY PASSWORD INPUT SCREEN ON SECOND HOST COMPUTER
TRANSFER INPUT PASSWORD TO FIRST HOST COMPUTER
S1602
S1603
PASSWORD IS CHECKED ?
NO
YES
S1605
SEND OUTPUT PERMISSION TO SECOND HOST COMPUTER
S1604
WARN TO SECOND HOST COMPUTER, AND STOP IMAGE OUTPUT
S1212
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
S1213
SEND IMAGE DATA TO IMAGE FORMING DEVICE
S1214
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED AND OUTPUT IT
END

FIG. 17

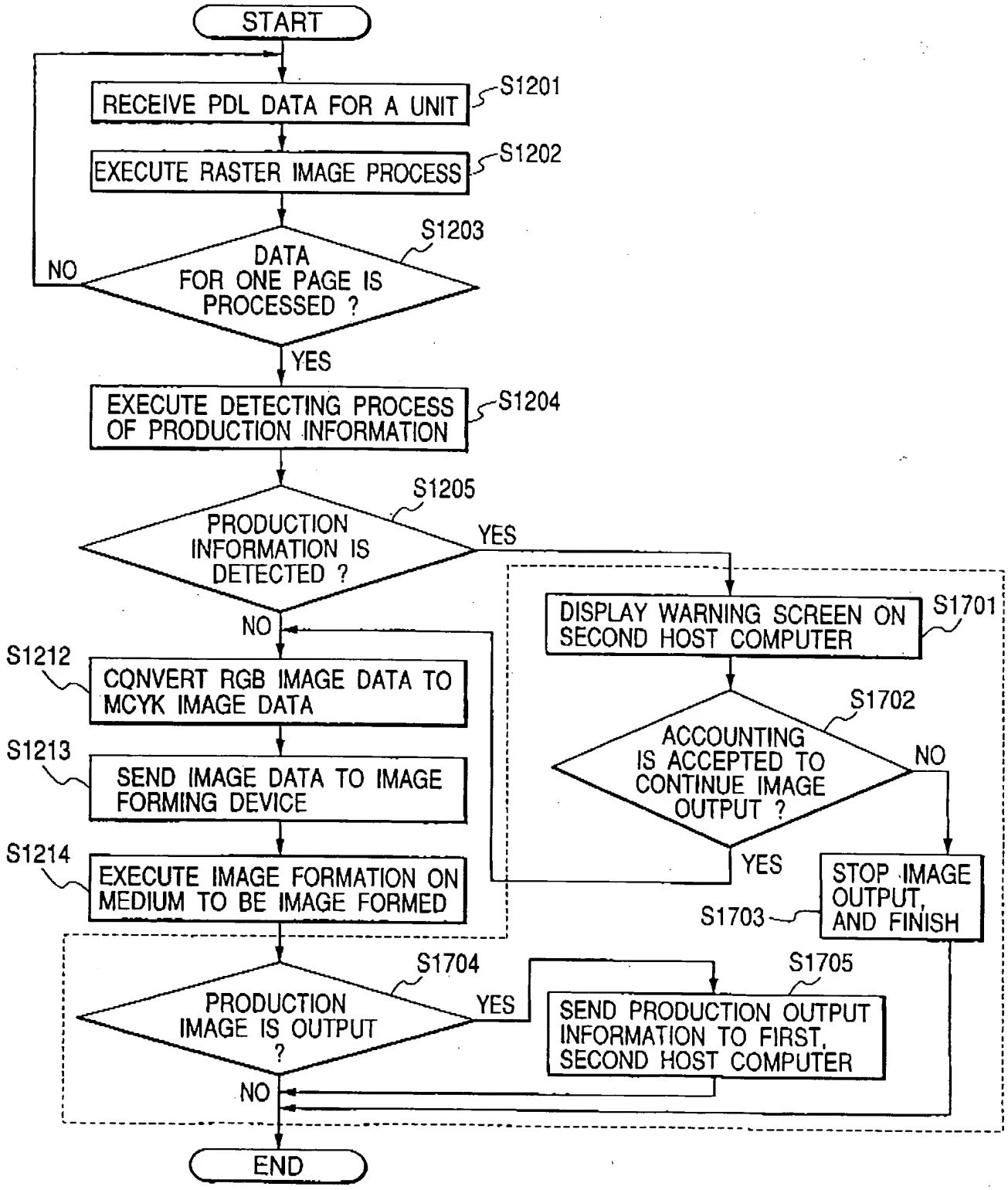
START
RECEIVE PDL DATA FOR A UNIT
S1201
EXECUTE RASTER IMAGE PROCESS
S1202
DATA FOR ONE PAGE IS PROCESSED ?
S1203
NO
YES
EXECUTE DETECTING PROCESS OF PRODUCTION INFORMATION
S1204
PRODUCTION INFORMATION IS DETECTED ?
S1205
YES
NO
DISPLAY WARNING SCREEN ON SECOND HOST COMPUTER
S1701
ACCOUNTING IS ACCEPTED TO CONTINUE IMAGE OUTPUT ?
S1702
NO
YES
STOP IMAGE OUTPUT, AND FINISH
S1703
S1212
CONVERT RGB IMAGE DATA TO MCYK IMAGE DATA
S1213
SEND IMAGE DATA TO IMAGE FORMING DEVICE
S1214
EXECUTE IMAGE FORMATION ON MEDIUM TO BE IMAGE FORMED
PRODUCTION IMAGE IS OUTPUT ?
S1704
YES
SEND PRODUCTION OUTPUT INFORMATION TO FIRST, SECOND HOST COMPUTER
S1705
NO
END

FIG. 18

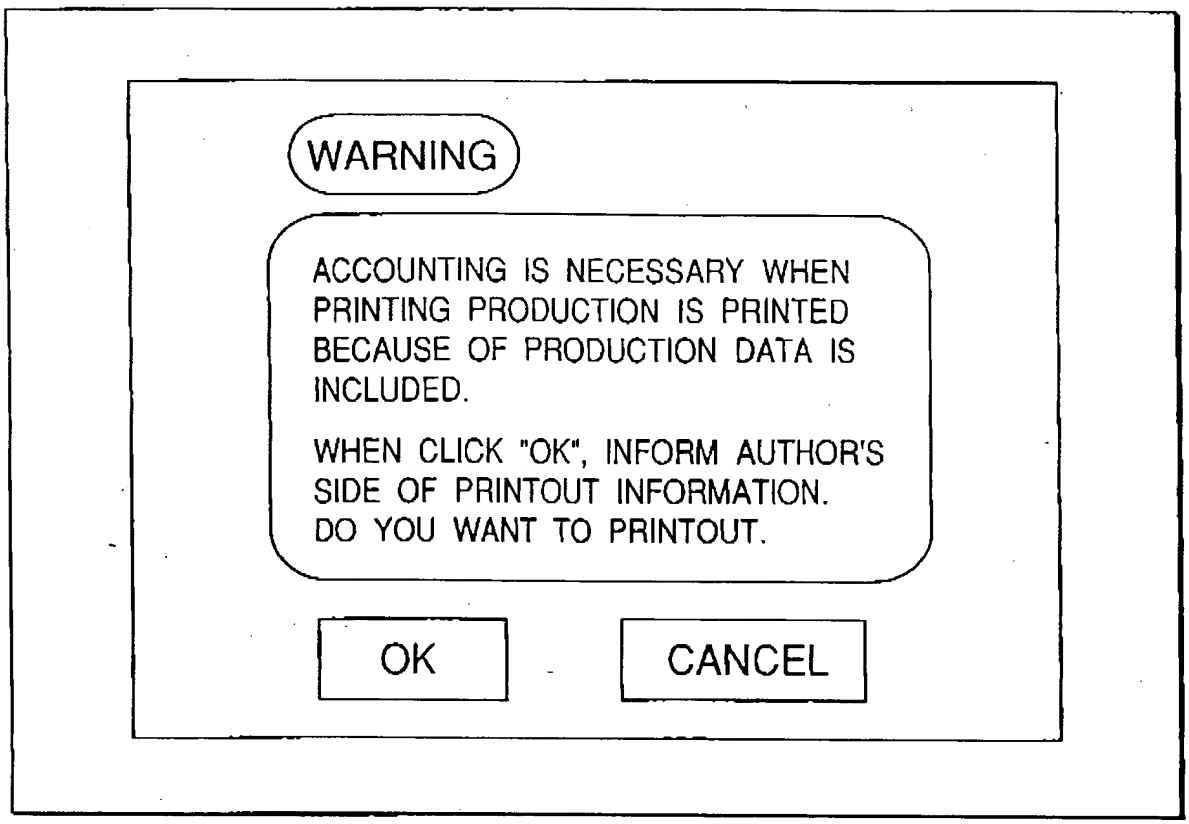
WARNING
ACCOUNTING IS NECESSARY WHEN PRINTING PRODUCTION IS PRINTED BECAUSE OF PRODUCTION DATA IS INCLUDED.
WHEN CLICK "OK", INFORM AUTHOR'S SIDE OF PRINTOUT INFORMATION. DO YOU WANT TO PRINTOUT.
OK
CANCEL

FIG. 19A

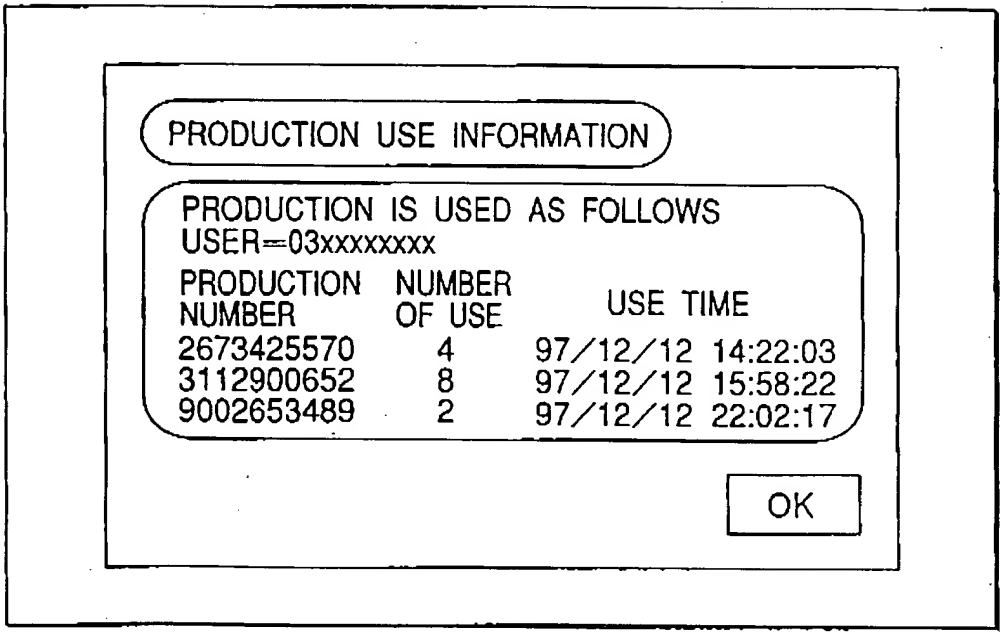

FIG. 19B

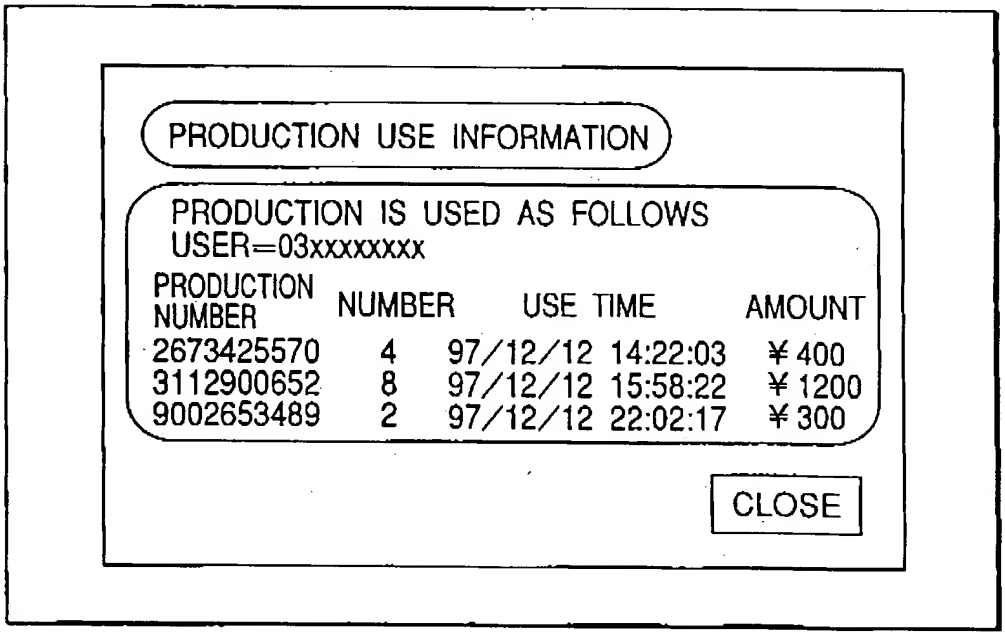

FIG. 20

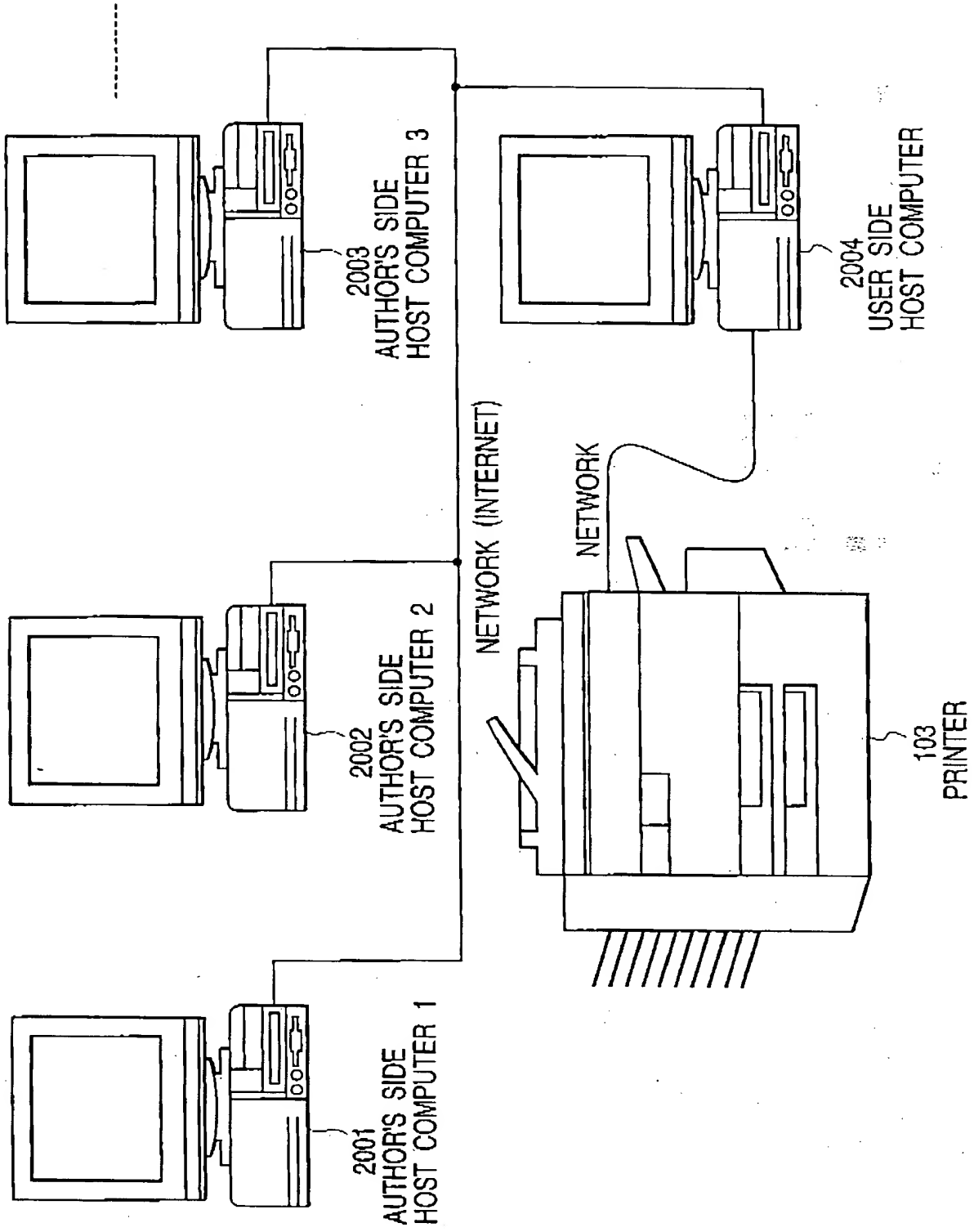
2001
AUTHOR'S SIDE
HOST COMPUTER 1
2002
AUTHOR'S SIDE
HOST COMPUTER 2
2003
AUTHOR'S SIDE
HOST COMPUTER 3
NETWORK (INTERNET)
NETWORK
2004
USER SIDE
HOST COMPUTER
103
PRINTER

FIG. 21

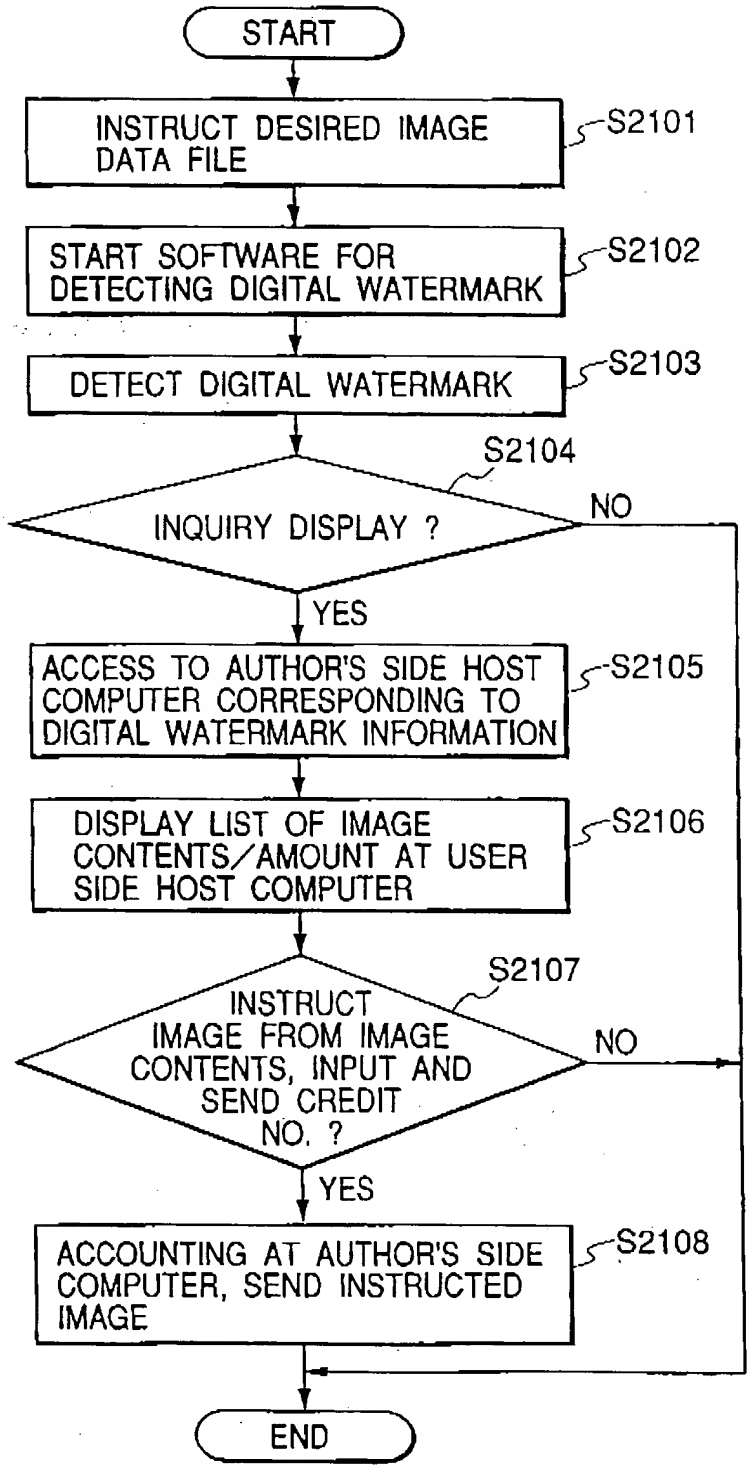
START
INSTRUCT DESIRED IMAGE DATA FILE
S2101
START SOFTWARE FOR DETECTING DIGITAL WATERMARK
S2102
DETECT DIGITAL WATERMARK
S2103
S2104
INQUIRY DISPLAY ?
NO
YES
ACCESS TO AUTHOR'S SIDE HOST COMPUTER CORRESPONDING TO DIGITAL WATERMARK INFORMATION
S2105
DISPLAY LIST OF IMAGE CONTENTS/AMOUNT AT USER SIDE HOST COMPUTER
S2106
S2107
INSTRUCT IMAGE FROM IMAGE CONTENTS, INPUT AND SEND CREDIT NO. ?
NO
YES
ACCOUNTING AT AUTHOR'S SIDE COMPUTER, SEND INSTRUCTED IMAGE
S2108
END

FIG. 22

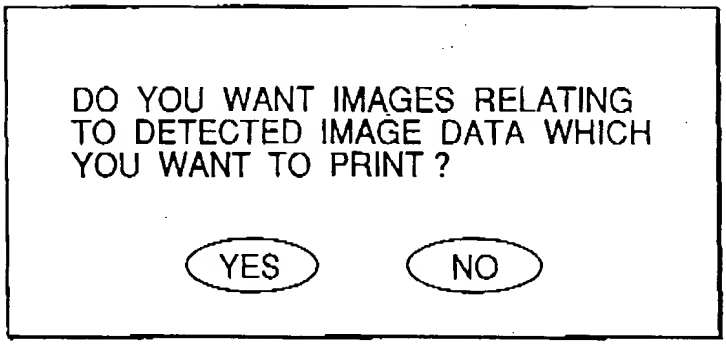
DO YOU WANT IMAGES RELATING TO DETECTED IMAGE DATA WHICH YOU WANT TO PRINT ?
YES
NO

FIG. 23

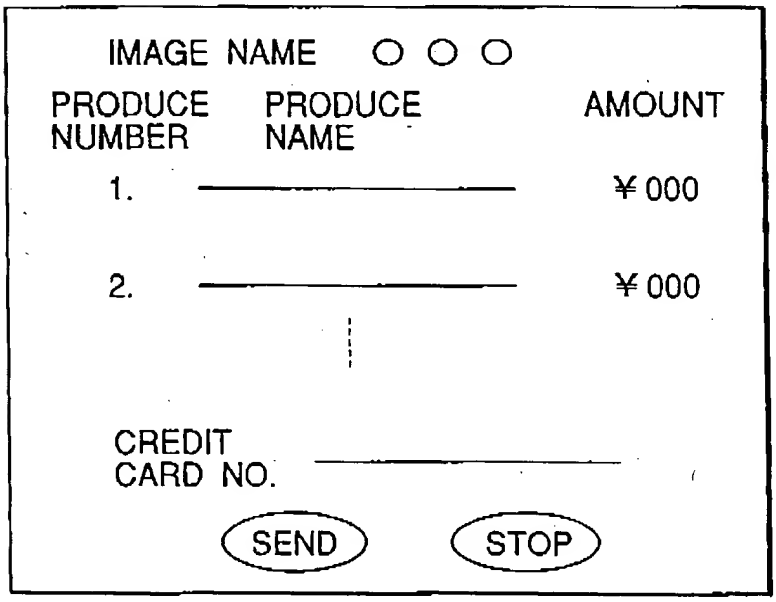
IMAGE NAME ○ ○ ○
PRODUCE NUMBER
PRODUCE NAME
AMOUNT
1.
¥000
2.
¥000
CREDIT CARD NO.
SEND
STOP